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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,520	09/26/2001	Makoto Mitani	1155-0226P	9596

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EXAMINER

LEE, RIP A

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 01/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/937,520

Applicant(s)

MITANI ET AL.

Examiner

Rip A. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 6, 27, 29, 30, 32, 35 and 45-56 is/are pending in the application.
- 4a) Of the above claim(s) 35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 6, 27, 29, 30, 32 and 45-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1, 6, 27, 29, 30, 32, 35 and 45-56 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

This office action follows a request for continued examination (RCE) under 37 CFR 1.114, filed November 12, 2003. Claims 1, 29, 30, and 32 have been amended. Currently, claims 1, 6, 27, 29, 30, 32, and 45-56 remain active. Claim 35 is still withdrawn from consideration.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claim is drawn to polymers having a molecular weight distribution, M_w/M_n , of not less than 1.5. The specification and original claim recite a limitation in M_w/M_n , of not less than 1.5. Appropriate correction of the claim is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 6, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,902,684 to Bullard *et al.*

Bullard *et al.* discloses an olefin polymer having a molecular weight distribution of about 1 to about 4 (col. 5, line 26) and whose average molecular weight lies in the range of 20,000-500,000 (col. 5, line 20). The polyolefin is a polymer prepared with ethylene and at least one alpha olefin containing 3-12 carbon atoms (col. 5, lines 1-5). The alpha olefin content is below 30 weight percent (col. 5, line 7). This prior art material meets the general requirements of the sixth element of the Markush group of the present claims. Finally, the material is useful in the manufacture of stretch wrap film, which is produced by extrusion molding.

5. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,449,724 to Moffat *et al.*

Moffat *et al.* teaches a polyethylene polymer having narrow molecular weight distribution of from about 1.00 to 2.5 and having a molecular weight of 5,000 to 1,000,000 or more (col. 5, lines 5-10). Specifically, the process is applied to high molecular weight polyethylene homopolymers or copolymers (col. 5, lines 11-13) where high molecular weight means the polymer has a molecular weight of 200,000 or more (col. 5, lines 20-22). Ethylene

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copolymers have a comonomer content that does not exceed 50 % (col. 5, line 49). Examples of comonomers are propylene, butene, and hexane, *inter alia* (col. 5, line 34). Moffat *et al.* is silent with respect to the melting point of the polymers.

The present invention claims olefin polymers having a melting point greater than 70 °C. The high molecular weight polymers, described in Moffat *et al.*, having a molecular weight of 200,000 or more would satisfy this melting point requirement. Supporting evidence for this notion is provided from samples in the Aldrich Chemicals catalogue (see accompanying PTO-892). Polyethylene having average M_w of 15,000 and M_n of 5500 has a melting point of 112 °C, and polyethylene having average M_w of 35,000 and M_n of 7700 has a melting point of 90 °C. Moreover, low density polyethylenes and linear low density polyethylenes are shown to have a melting point in the range of 100-125 °C.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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8. Claims 1, 6, 27, 29, and 45-56 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over EP 874,005 to Fujita *et al.*

The prior art of Fujita *et al.* teaches use of a titanium-containing transition metal complex, whose structure meets the limitations imposed in present claim 29, in a catalyst for polymerization of olefins. Specifically, substituent R¹ is a pentafluorophenyl group (see page 23, row 1, 4th compound from left). Since this compound and Applicant's compound (1) are identical, DFT parameters recited in the present claims are also the same.

Although the reference is silent with respect to the properties of the polymer, a reasonable basis exists to believe that the polymer possesses the requisite properties, especially in view of the fact that they are prepared by essentially the same transition metal catalysts. Furthermore, it is noted that the degree of polymerization may be manipulated by external variables such as reaction time, and this fact is well appreciated by those having skill in the art. Since the PTO does not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

9. Claims 1, 6, 27, 29, 30, and 45-56 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over EP 1,008,595 to Matsui *et al.*

Matsui *et al.* discloses use of a titanium-containing transition metal complex, whose structure meets the limitations imposed in present claim 29, in a catalyst for polymerization of olefins. Specifically, substituent R¹ is a 3,5-bis(trifluoromethyl)phenyl group and a pentafluorophenyl group (see page 15, row 5, 1st and 2nd compounds from left). The reference is

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silent with respect to any parameter determined by DFT calculations for any of the compounds described therein. However, since the structures of the prior art and those claimed are essentially the same, a reasonable basis exists to expect that DFT calculations of the prior art compounds yield similar results. Since the PTO can not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference.

Although the reference is silent with respect to the properties of the polymer, a reasonable basis exists to believe that the polymer possesses the requisite properties, especially in view of the fact that they are prepared by essentially the same transition metal catalysts. Furthermore, it is noted that the degree of polymerization may be manipulated by external variables such as reaction time, and this fact is well appreciated by those having skill in the art. Since the PTO does not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

10. Claims 1, 6, 27, 29, 30, 32, and 45-56 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 2000-119316 to Tsuru *et al.*

The prior art of Tsuru *et al.* discloses the same compounds listed in Applicant's table (page 282) of representative compounds, and therefore, they are expected to exhibit the same DFT parameters recited in the present claims (see page 7, row 1, 3rd and 4th entry; row 2, 3rd entry, row 4, 2nd and 5th entry; page 8, row 1, 3rd entry). Tsuru *et al.* teaches the polymerization of olefins using compounds of the invention. Although the reference is silent with respect to the properties of the polymer, a reasonable basis exists to believe that the polymer possesses the requisite properties, especially in view of the fact that they are prepared by essentially the same

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transition metal catalysts. Furthermore, it is noted that the degree of polymerization may be manipulated by external variables such as reaction time, and this fact is well appreciated by those having skill in the art. Since the PTO does not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

Response to Arguments

11. Applicants traverse the rejection of claims 1 and 27 under 35 U.S.C. 102(b)/35 U.S.C. 103(a) in view of WO 91/12285 to Turner *et al.* As pointed out by Applicants, claim language has been amended appropriately to exclude block copolymers. Consequently, the rejection has been withdrawn.

12. The rejection of Claim 27 under 35 U.S.C. 103(a) as being unpatentable over Moffat *et al.* in view of Turner *et al.* has also been withdrawn.

13. Applicants traverse the rejection of claims 1 and 6 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 5,449,724 to Moffat *et al.* Applicant's arguments have been considered fully, but they are not persuasive. The claims are drawn to a polymer product, rather than the method by which it is prepared. Since the prior art teaches an olefin copolymer having the requisite features, the rejection of record has not been withdrawn.

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14. Applicants traverse the rejection of claims in view of EP 874,005 to Fujita *et al.*

The data presented by Applicants shows clearly that Fujita's 3,5-bis(trifluoromethyl)phenyl substituted complex (comparative example 3) does not produce the desired polymer product since DFT parameters $r(H^B-Z)$ and $E_{sp}(H^B-Z)$ lie outside the claimed range. Fujita *et al.* also teach use of a pentafluorophenyl substituted derivative that is identical to Applicant's compound (1). The structural features of this compound do not meet the limitations set forth in present claims 30 and 32; however, they still meet the claimed features of present claim 29. To date, Applicants have not met the burden of establishing an unobviousness difference with respect to the properties of the polymer produced using the catalyst taught in the prior art. As a result, the rejection has not been withdrawn.

15. Applicants traverse the rejection of claims in view of EP 1,008,595 to Matsui *et al.* Applicant's arguments have been considered fully, but they are not persuasive. As indicated above, Matsui *et al.* teaches compounds whose structures meet the limitations of the present claims. In this case, experimental data presented by Applicants are not probative of nonobviousness because they are not representative of the closest prior art. *In re Johnson*, 747 F.2d 1456, 1461, 223 USPQ 1260 (Fed. Cir. 1984). Here, the specification data does not provide a comparison with compounds containing a heterocyclic ring. Furthermore, Applicants have not met the burden of establishing an unobviousness difference with respect to the properties of the polymer produced using the catalyst taught in the prior art. As a result, the rejection has not been withdrawn.

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16. Applicants traverse the rejection of claims in view of JP 2000-119316 to Tsuru *et al.* Since Applicants have not met the burden of establishing an unobviousness difference with respect to the properties of the polymer produced using the catalyst taught in the prior art, the rejection has not been withdrawn.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (571)273-1104.

ral

December 29, 2003



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